REMARKS

The Office Action of May 11, 2004 has been received and its contents carefully noted.

On page 3, the Office Action objects to claim 2 as depending from a rejected claim. Accordingly, the present Amendment cancels claim 2 and transfers its subject matter to claim 1 (with improvements of a formal nature in claim 1). Claim 1 now corresponds to objected-to claim 2 in independent form, so it is respectfully submitted that claim 1 is in condition for immediate allowance.

The present Amendment also revises claim 3 and adds new claims 4-6 to further protect the invention. Additionally, a proposed drawing change is attached to the Amendment.

The present application discloses two embodiments of an improved ONO (oxide-nitride-oxide) flash memory array. The improvement is that disturbance between adjacent memory cells is reduced during programming or erasing or reading-out. This is accomplished by providing an implanted pocket arrangement that is asymmetric on different sides of a buried diffusion region. For example, the adjacent memory cells shown in Figure 2 of the present application's drawings have a pocket 232 at one side of a buried diffusion region 222 but not the other side. In the embodiment shown in Figure 5, the buried diffusion region 222 has pockets 232 and 306 with different impurity concentrations.

The Office Action rejects claims 1 and 3 for anticipation by a published U.S. application to Yoshino. The rejection is now moot with respect to claim 1, for the

reasons discussed above. Furthermore, it is respectfully submitted that the current formulation of claim 3 is patentable over the reference, as is new independent claim 4.

Yoshino's Figure 11 illustrates a single memory cell having "extension regions" 15 and 16 in order to yield an improved punch through withstand voltage and an increased speed for writing or erasing (see Yoshino's paragraph [0124]). No concern is expressed in the reference about disturbance between adjacent cells in an ONO flash memory array during programming or erasing or reading-out. Indeed, Yoshino's Figure 1 illustrates only a single memory cell, not adjacent cells.

Independent claim 3 now refers to "first and second adjacent memory cells." The claim recites a "second buried diffusion region having a first portion in the first memory cell and a second portion in the second memory cell." Claim 3 provides that a first pocket is implanted at the first portion of the second buried diffusion region and that a second pocket is implanted at the second portion. Claim 3 also provides that the first and second pockets respectively have first and second concentrations, with the second concentration being "different from the first concentration."

In contrast to what is now recited in claim 3, Yoshino's Figure 11 does not disclose a buried diffusion region having different portions in different memory cells. Nor would anything in the reference have suggested, to an ordinarily skilled person, using different impurity concentrations for the first and second implanted pockets of claim 3.

Similarly, new independent claim 4 provides that a second buried diffusion region has a first portion in a first memory cell and a second portion in a second memory cell. Claim 4 recites "means for providing the second buried diffusion region with an

implanted pocket arrangement that is asymmetrical with respect to the first and second portions" of the second buried diffusion region. The arrangement shown in Yoshino's Figure 11 does not even have a "second buried diffusion region" in accordance with claim 4 (that is, with portions in different memory cells), and there is certainly nothing in the reference that has suggested an implanted pocket arrangement that is asymmetrical with respect to such portions.

Since new claims 5 and 6 depend from claim 4 and recite additional limitations to further define the invention, they are patentable along with claim 4 and need not be further discussed.

For the foregoing reasons, it is respectfully submitted that this application is now in condition for allowance. Reconsideration of the application is therefore respectfully requested.

Respectfully submitted,

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